REMARKS

The Office Action dated July 22, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 3-8, 10-15 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown (U.S. Patent No. 6,754,211) in view of Roy (U.S. Patent No. 6,246,682). The Office Action took the position that Brown discloses all of the elements of the claims, with the exception of a memory management unit. The Office Action then cited Roy as allegedly curing this deficiency in Brown. This rejection is respectfully traversed for at least the following reasons.

Claim 1, upon which claims 2-7 are dependent, recites a method of replicating multicast datagrams in a network device. The method includes determining by a memory management unit whether a scheduled outgoing datagram stored in a main memory is a multicast (MC) packet. The method also provides that when the scheduled outgoing datagram type is the MC datagram performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register. The method further provides that when the scheduled outgoing datagram type is the MC datagram performing awaiting a ready signal from an egress port of the network switch, sending the outgoing datagram to the egress port from the main memory along with the copy count value, changing the copy count value in the copy count register, and

modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value, and forwarding the outgoing datagram from the egress port.

Claim 8, upon which claims 9-14 are dependent, recites a network device for handling datagrams in a network. The device includes a main memory, and a memory management unit. The device also includes determining means for determining whether a scheduled outgoing datagram stored in the main memory is a multicast (MC) datagram, performing means for performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register, and awaiting means for awaiting a ready signal from an egress port of the network switch. The device also includes sending means for sending the outgoing datagram to the egress port from the main memory along with the copy count value, changing means for changing the copy count value in the copy count register, modifying means modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value, and forwarding means for forwarding the outgoing datagram from the egress port. The performing, awaiting, sending, changing, modifying and forwarding means are configured to be activated when the scheduled outgoing datagram type is the MC datagram.

Claim 15, upon which claims 16-18 are dependent recites a network device for handling datagrams. The device includes at least one data port interface, said at least one data port interface supporting a plurality of data ports transmitting and receiving

datagrams. The device also includes a memory management unit, in communication with said at least one data port interface, and a main memory, said main memory communicating with said at least one data port interface and controlled by the memory management unit. The memory management unit is configured to determine whether a scheduled outgoing datagram stored in the main memory is a multicast (MC) datagram. The scheduled outgoing datagram is of a type that is the MC datagram, the memory management unit is configured to perform a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet, and is also configured to write the copy count value to a copy count register. The memory management unit is also configured to send the outgoing datagram to the egress port from the main memory along with the copy count value, configured to change the copy count value in the copy count register. The at least one data port interface is configured to modify a VLAN identifier of the outgoing datagram if necessary based on the copy count value and configured to forward the outgoing datagram from the egress port.

As will be discussed below, the combination of Brown and Roy fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above. The rejection is respectfully traversed for at least the following reasons.

Brown does not disclose "performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count

register...sending the outgoing datagram to the egress port from the main memory along with the copy count value...changing the copy count value in the copy count register...modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value", as recited, in part, in independent claim 1 (emphasis added). The Office Action alleged that columns 1, 6 and 7 of Brown disclose the above-noted features of the claims. Applicants disagree and submit that Brown does not disclose any type of copy count value determination, and especially in a manner consistent with the claims.

In the Response to Arguments section of the Office Action, it was alleged that

> "Brown teaches...to determine if all egress modified IP multicast data packets 112a-f have been forwarded, the number of port queues that the ingress modified IP Multicast data packet 126 has been queued on associated with each ingress modified IP Multicast data packet 126 is stored in a port queue counter register (see col. 7 lines 9-22). This reads on "performing a lookup of a replicate count table to determine a copy count value and writing the copy count value to a copy count register."

Applicant respectfully disagrees that column 7, lines 9-22 of Brown "reads on", or, alternatively, discloses "performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register", as recited, in part, in independent claim 1 and similarly in independent claims 8 and 15.

As noted previously, Brown only uses a "copy" for making a "copy" of a packet. A copy count value associated with a copied packet is not determined anywhere in the disclosure of Brown. In addition, because Brown fails to disclose determining a copy

count value associated with a copied packet, certainly, Brown also fails to disclose writing the copy count value to a copy count register, sending the copy count value, changing the copy count value and modifying a VLAN identifier, if necessary, based on the copy count value.

Contrary to the teachings of Brown, Paragraph [0059] of the present application discloses that the MMU keeps track of "**the number of copies (copy count) that the packet has been duplicated.**" Clearly, Brown does not count the number of copies of a duplicate packet and does not keep track of that number of copies. Brown is directed to forwarding a copy of a multicast packet to egress ports of members of a multicast group, and does not disclose any copy count value information related to the packet, as recited in claim 1. Column 6 of Brown discloses forwarding a copy of a multicast packet in greater detail with reference to FIG. 1. However, no discussion of a copy count value is disclosed. Column 7 of Brown discloses details of a counter register which is used to determine the occurrences of forwarding multicast data packets to egress ports.

A port count queue is decremented each time an egress modified data packet has been forwarded on an egress port. The egress modified data packet does not represent a copy count value (emphasis added). Furthermore, none of the teachings disclosed in Brown teach or suggest "performing a lookup of a replicate count table to determine a copy count value and writing the copy count value to a copy count register...sending the outgoing datagram to the egress port from the main memory along with the copy count value...changing the copy count value in the copy count register...modifying a VLAN

identifier of the outgoing datagram if necessary based on the copy count value", as recited, in part, in independent claim 1 and similarly in independent claims 8 and 15. Brown simply fails to teach a replicate count table with a copy count value, and because Brown fails to teach such features, Brown certainly fails to teach sending and changing the copy count value and modifying a VLAN identifier based on the copy count value.

In addition to the above noted deficiencies in Brown, Applicants submit that Roy also fails to teach or suggest the subject matter recited in the claims. Roy discloses a method for managing multiple queues of ATM cells. Cells entering a switch are examined, placed in shared RAM, and a pointer to the RAM location is written in another location in the shared RAM. Table entries in management RAM are updated each time a cell is added to a queue. When a multicast session is begun, a multicast table is created with all of the addresses in the multicast session. When a multicast cell is received, the multicast session table is consulted and pointers to the cell are copied to queues for each address in the table. When a pointer exits a queue, the cell pointed to by the pointer is read and transmitted to the address of the queue. As the cell is read, the destination count for the cell is decremented. When the destination count is reduced to zero, the RAM location used to store the cell is added to the free list. Each time a pointer is read, the table entry for the affected queue is updated.

Roy fails to teach or suggest "performing a lookup of a replicate count table to determine a copy count value and writing the copy count value to a copy count register...sending the outgoing datagram to the egress port from the main memory along

with the copy count value...changing the copy count value in the copy count register...modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value", as recited, in part, in independent claim 1. Roy does not disclose any type of copy count value being measured or used for any purpose related to the claim recitations.

Therefore, Applicants submit that Brown and Roy fail to teach all of the subject matter of independent claims 1, 8 and 15. By virtue of dependency, Brown also fails to teach the subject matter of dependent claims 2-7, 9-14, 16 and 17. Withdrawal of the rejection of claims 1, 3-8, 10-15, 17 and 18 are kindly requested.

Claim 2, 9 and 16 was rejected under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Headrick (U.S. Patent No. 5,724,358). Applicants respectfully traverse this rejection.

Brown is discussed above. Headrick discloses a system and method for communicating multiple priority level data packets between input ports and output ports of a switch. A data packet has a header portion identifying at least one output port destination and a level of priority of the data within the data packet. A buffer, shared by the output ports, stores the data packet in a selected buffer location based on the output port destination and priority level of the data packet. Pointers to buffer locations containing data packets having a particular priority level are stored in one or more priority sub-queues for one or more of the plurality of output ports based on the output

port destinations and the priority level of the data packet. The data packets are output to the output ports in priority order.

Claim 2, 9 and 16 are dependent upon claims 1, 8 and 15 and contain all of the limitations thereof. As discussed above, the teachings of Brown fail to disclose or suggest all of the elements of claims 1, 8 and 15. In addition, Headrick fails to cure the deficiencies in Brown as Headrick also fails to disclose or suggest "performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register...sending the outgoing datagram to the egress port from the main memory along with the copy count value...changing the copy count value in the copy count register...modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value", as recited, in part, in independent claim 1 and similarly in independent claims 8 and 15. Thus, the combination of Brown and Headrick fails to disclose or suggest all of the elements of claim 2, 9 and 16. Furthermore, claim 2, 9 and 16 should be allowed for at least their dependence upon claims 1, 8 and 15 and for the specific limitations recited therein.

For at least the reasons discussed above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-18 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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